

Case 3131

***Hybognathus stramineus* Cope, 1865 (currently *Notropis stramineus*; Osteichthyes, Cypriniformes): proposed conservation of the specific name**

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Abstract. The purpose of this application is to conserve the specific name of *Notropis stramineus* (Cope, 1865) for a freshwater fish known as the sand shiner (family CYPRINIDAE) from eastern and central North America. The name is widely used and almost universally accepted but is threatened by the little used *Cyprinella ludibunda* Girard, 1856 which in 1989 was rendered a senior subjective synonym. It is proposed that the name *ludibunda* be suppressed, together with the unused putative senior synonym *Alburnus lineolatus* Putnam, 1863.

Keywords. Nomenclature; taxonomy; Osteichthyes; Cypriniformes; CYPRINIDAE; freshwater fish; North America; sand shiner; *Notropis stramineus*; *Cyprinella ludibunda*.

1. Girard (1856; see BZN 51: 262-263, September 1994, for the date of publication) described 23 new genera and 133 new species of catostomid and cyprinid fishes, chiefly from the central and western United States, but including some from the eastern U.S. and northern Mexico. Girard's work is cited repeatedly and, although a majority of the new taxa are currently in synonymy, many are presently accepted as valid (nine genera, 37 species and several subspecies). No holotypes were designated, but syntypes were preserved and deposited in the United States National Museum (now the National Museum of Natural History, Smithsonian Institution) and the Academy of Natural Sciences of Philadelphia (ANSP). From these, specimens were distributed to several other museums, especially the Museum of Comparative Zoology, Cambridge, Massachusetts. The materials were collected by naturalists attached to the expeditions of the United States and Mexican Boundary Commission and the Pacific Railroad Survey. Collection data are often vague or obviously in error, and specimens are often poorly preserved. Subsequent study of syntypes indicates that many series are composite, including two or more species (see Suttkus, 1958; Bailey & Uyeno, 1964; C.R. Gilbert, 1978). Many descriptions are readily identifiable, but the quality of others is debatable, and some species were described under several names (about 12 for *Cyprinella lutrensis*).

2. Girard (1856, p. 35) described *Cyprinella ludibunda* as a new species. All the specimens found were said to be immature and the locality was 'not precisely known'. In 1989, R.L. Mayden and C.R. Gilbert discovered a long overlooked syntype (ANSP 2841, ex USNM 132) of *C. ludibunda* which they designated as the lectotype. The lectotype is, however, a specimen of *Notropis stramineus* (Cope, 1865), the sand

shiner (family CYPRINIDAE), a widely distributed, abundant and familiar fish from southern Canada, eastern and central United States, and northern Mexico. Mayden & C.R. Gilbert's (1989, p. 1085) lectotype designation rendered the specific name of *N. stramineus* a junior subjective synonym of *C. ludibunda* Girard, 1856, and they adopted the latter little-used name as valid.

3. For a period in the late 19th century, *Cyprinella ludibunda* was occasionally cited with brief, often confusing, statements drawn in part from Girard (1856). Jordan & C.H. Gilbert (1883, p. 171), using the name *Cliola ludibunda*, commented 'a dubious species, from Cottonwood Creek, Utah'. Jordan (1885, p. 124), using *Notropis ludibundus*, listed a specimen (S.I. 132) from Cottonwood Creek in the Museum of the Academy. Jordan & Evermann (1896, pp. 56, 273), using *N. ludibundus*, recorded the locality as unknown; the characterization is in part discordant with those of Girard (1856) and Jordan & C.H. Gilbert (1883). Without additional information, these accounts are not identifiable with the sand shiner.

4. Fowler (1910, p. 280, pl. 17, fig. 23) illustrated a 'cotype' of *Cyprinella ludibunda*, without locality, clearly the fish listed by Jordan (1885, p. 124) said to be S.I. [USNM] 132 in the Academy (ANSP 2841; see Böhlke, 1984, p. 82; C.R. Gilbert, 1998, p. 106). This is the lectotype of *C. ludibunda* designated by Mayden & C.R. Gilbert (1989). C.R. Gilbert (1978, pp. 48, 56-57) investigated the confusion about the type locality of *C. ludibunda* (and two other nominal species) and concluded that it should properly be 'Cottonwood River, ca 5 mi. NW of Durham, Marion Co., Kansas', a credible provenance for the sand shiner. C.R. Gilbert (1978) had regarded *C. ludibunda* as a senior synonym of both *Notropis stramineus* (Cope) and *Notropis volucellus* (Cope, 1865) since both species are included among the syntypes, but he considered it 'best to defer action on the problem at this time'.

5. Cope (1865, p. 283) described *Hybognathus stramineus* from Grosse Isle, Detroit River, Michigan on 'many specimens'. The species, which is currently regarded as having two subspecies (see Bailey & Allum, 1962; Tanyolac, 1973), had a troubled early nomenclatural history that included such names as *Alburnops blennius* Girard, 1856 (i.e. *Notropis blennius*, the river shiner) and *Moniana deliciosa* Girard, 1856. The history was reviewed by Hubbs (1926) who employed *Notropis deliciosus*, and Suttkus (1958) who resolved the earlier confusion by showing that the lectotype of *Moniana deliciosa* is a specimen of *Cyprinella texana* (Girard, 1856) (i.e. *Notropis texanus*), which name has since been generally adopted for the weed shiner (see C.R. Gilbert, 1978, p. 83). For the sand shiner, Suttkus (1958, p. 317) employed *Notropis stramineus* (Cope, 1865), which is defined by the lectotype specimen ANSP 4131 designated by Fowler (1910, p. 274, pl. 15, fig. 5), five paralectotypes ANSP 4132-4136 (see Böhlke, 1984, p. 92), and five paralectotypes UMMZ 213806 in the Museum of Zoology of the University of Michigan. Since 1958, the sand shiner has been termed *Notropis stramineus* (Cope) in scores of publications throughout its extensive geographic range (mapped by C.R. Gilbert in Lee et al., 1980, p. 314). These include four editions (1960 to 1991) of the American Fisheries Society's list of *Common and Scientific Names of Fishes from the United States and Canada*, widely followed by fishery workers. The fifth edition (Robins et al., 1991, pp. 23, 77) employed *Notropis stramineus* and noted: 'R.L. Mayden & C.R. Gilbert, 1989,

Copeia (4): 1084, showed that this name is a junior synonym of *Cyprinella ludibunda* Girard, 1856 (= *Notropis ludibundus*). However, this name has been unused since its proposal. A petition has been submitted to the International Commission on Zoological Nomenclature to conserve the familiar name *stramineus*. Until a decision is rendered, existing usage is retained under Article 80 of the Code'. However, the present case was not submitted until June 1999.

6. Additional treatises that employ *Notropis stramineus* for the sand shiner include:

General references: Eddy (1969); Eddy & Underhill (1974); Hocutt & Wiley (Eds., 1986); Moore (1968); Schmidt & Gold (1995).

Regional references: **Arkansas** — Robison & Buchanan (1988); **Canada** — Scott & Crossman (1973), McAllister (1990); **Great Lakes** — Hubbs & Lagler (1964, pp. vii, 77); **Illinois** — Smith (1979); **Indiana** — Nelson & Gerking (1968); **Kansas** — Metcalf (1966), Cross (1967); **Kentucky** — Clay (1975), Burr & Warren (1986); **Manitoba** — Fedoruk (1971); **Mexico** — Espinosa Pérez, Gaspar Dillanes & Fuentes Mata (1993); **Minnesota** — Phillips, Schmid & Underhill (1982); **Missouri** — Pflieger (1975); **Montana** — Brown (1971), Holton & Johnson (1996); **Nebraska** — Morris, Morris & Witt (1972); **New Mexico** — Sublette, Hatch & Sublette (1990); **New York** — Smith (1986); **Ohio** — Trautman (1981); **Ohio River** — Pearson & Krumholz (1984); **Oklahoma** — Miller & Robison (1973); **Ontario** — Mandrak & Crossman (1992); **Pennsylvania** — Cooper (1983); **Saskatchewan** — Atton & Merkowsky (1983); **South Dakota** — Bailey & Allum (1962); **Tennessee** — Etnier & Starnes (1993); **Utah** — Sigler & Sigler (1996); **Virginia** — Jenkins & Burkhead (1994); **Wisconsin** — Becker (1983); **Wyoming** — Baxter & Stone (1994). Although most of the publications above date from 1960 to 1988, ten appeared after Mayden & C.R. Gilbert's (1989) resurrection of *N. ludibundus*.

7. A few publications that appeared after 1989 have followed Mayden & C.R. Gilbert's recommended use of *Notropis ludibundus*. They include:

General references: Eschmeyer, Ferraris, Hoang & Long (1998); C.R. Gilbert (1998); Mayden, Burr, Page & Miller (1992); Page & Burr (1991); Rohde, Arndt, Lindquist & Parnell (1994); and Warren, Burr & Grady (1994).

Regional references: **Kansas** — Cross & Collins (1995); and **West Virginia** — Stauffer, Boltz & White (1995).

8. Putnam (1863, p. 9) established the new species *Alburnus lineolatus*, using a manuscript name assigned by Agassiz to specimens in the MCZ, Cambridge, Massachusetts in 1854. Putnam's brief description was: 'Body light brown with a broad silvery band having dark points, extending from the head to the caudal fin. Average length, two and a half inches. From the Osage River. Collected by Mr. G. Stolley'. Günther (1868, pp. 259–260) redescribed the species using the name *Leuciscus lineolatus*. *Alburnus lineolatus* was regarded as a questionable synonym of *Notropis scylla* (Cope, 1871) (= *N. stramineus*) by Jordan & Evermann (1896, p. 263). The cited description is certainly insufficient for definite identification. However, as C.R. Gilbert (1978, p. 55) indicated, C.L. Hubbs in 1958 identified a specimen in the Natural History Museum, London (BMNH 1867.4.12.15) received from the MCZ and likely to be a syntype of *A. lineolatus*, as *Notropis deliciosus* auct. (= *N. stramineus*). If the London specimen is a syntype of *Alburnus lineolatus* Putnam, its identification with *Notropis stramineus* is adequately confirmed by Günther's

redescription and Hubbs's determination. *Alburnus lineolatus* has not been employed as the name of the sand shiner during the 20th century.

9. The specific name of *Notropis stramineus* (Cope, 1865) is a familiar name in considerable use, retention of which will ensure nomenclatural stability for the species. Replacement by the senior synonym *Notropis ludibundus* (Girard, 1856) would considerably hinder communication among workers; some authors would adopt it while others would retain *stramineus*. I refer this application to the Commission in accord with Article 23b of the 1985 Code and Article 23.9.3 of the 4th Edition, which comes into effect on 1 January 2000.

10. Although there is no 'case law' in zoological nomenclature, it may be noted that the present case is completely analogous to the replacement of another name in use (*Notropis topeka* (C.H. Gilbert, 1884)) by an almost unused name (*Moniana tristis*) published by Girard (1856); that replacement was also by Mayden & C.R. Gilbert (1989) and again was dependant on their lectotype fixation for the unused name. In Opinion 1821 (September 1995) the Commission conserved the name *N. topeka*.

11. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary powers to suppress the following specific names for the purposes of the Principle of Priority but not for those of the Principle of Homonymy:
 - (a) *ludibunda* Girard, 1856, as published in the binomen *Cyprinella ludibunda*;
 - (b) *lineolatus* Putnam, 1863, as published in the binomen *Alburnus lineolatus*;
- (2) to place on the Official List of Specific Names in Zoology the name *stramineus* Cope, 1865, as published in the binomen *Hybognathus stramineus* and as defined by the lectotype designated by Fowler (1910);
- (3) to place on the Official Index of Rejected and Invalid Specific Names in Zoology the following names:
 - (a) *ludibunda* Girard, 1856, as published in the binomen *Cyprinella ludibunda* and as suppressed in (1)(a) above;
 - (b) *lineolatus* Putnam, 1863, as published in the binomen *Alburnus lineolatus* and as suppressed in (1)(b) above.

References

- Atton, F.M. & Merkowsky, J.J. 1983. *Atlas of Saskatchewan fish*. vi, 281 pp. Technical Report 83-2. Department of Parks and Renewable Resources. Regina, Saskatchewan.
- Bailey, R.M. & Allum, M.O. 1962. Fishes of South Dakota. *University of Michigan Museum of Zoology, Miscellaneous Publications*, 119: 1-131.
- Bailey, R.M. & Uyeno, T. 1964. Nomenclature of the blue chub and the tui chub, cyprinid fishes from western United States. *Copeia*, 1964(1): 238-239.
- Baxter, G.R. & Stone, M.D. 1995. *Fishes of Wyoming*. 290 pp. Wyoming Game and Fish Department.
- Becker, G.C. 1983. *Fishes of Wisconsin*. xii, 1052 pp. University of Wisconsin Press, Madison, Wisconsin.
- Böhlke, E.B. 1984. Catalog of type specimens in the ichthyological collection of the Academy of Natural Sciences of Philadelphia. *Special Publications of the Academy of Natural Sciences of Philadelphia*, 14: 1-246.
- Brown, C.J.D. 1971. *Fishes of Montana*. 207 pp. Big Sky Books, Bozeman, Montana.

- Burr, B.M. & Warren, M.L., Jr. 1986. *A distributional atlas of Kentucky fishes*. xvi, 398 pp. Kentucky Nature Preserves Commission Scientific and Technical Series, no. 4. Frankfort, Kentucky.
- Clay, W.M. 1975. *The fishes of Kentucky*. viii, 416 pp. Kentucky Department of Fish and Wildlife Resources, Frankfort.
- Cooper, E.L. 1983. *Fishes of Pennsylvania and the northeastern United States*. 243 pp. Pennsylvania State University Press, University Park and London.
- Cope, E.D. 1865. Partial catalogue of the cold-blooded Vertebrata of Michigan, part 1. *Proceedings of the Academy of Natural Sciences of Philadelphia*, 16(8): 276–285.
- Cross, F.B. 1967. Handbook of fishes of Kansas. *University of Kansas Museum of Natural History, Miscellaneous Publications*, 45: 1–357.
- Cross, F.B. & Collins, J.T. 1995. Fishes in Kansas, Ed. 2 rev. *University of Kansas Museum of Natural History, Education Series*, 3: 1–315.
- Eddy, S. 1969. *How to know the freshwater fishes*, Ed. 2. x, 186 pp. Brown, Dubuque, Iowa.
- Eddy, S. & Underhill, J.C. 1974. *Northern fishes, with special reference to the Upper Mississippi Valley*. xix, 414 pp. University of Minnesota Press, Minneapolis.
- Eschmeyer, W.N., Ferraris, C.J., Hoang, M.D. & Long, D.J. 1998. Part 1: Species of fishes. Pp. 25–1820 in Eschmeyer, W.N. (Ed.), *Catalog of fishes*, vols. 1–2. California Academy of Sciences, Center for Biodiversity Research and Information, Special Publication No. 1, San Francisco.
- Espinosa Pérez, H., Gaspar Dillanes, M.T. & Fuentes Mata, P. 1993. *Listados faunísticos de México. III. Los peces dulceacuicolas Mexicanos*. Map, 99 pp. Universidad Nacional Autónoma de México, D.F., México.
- Etnier, D.A. & Starnes, W.C. 1993. *The fishes of Tennessee*. xiv, 681 pp. University of Tennessee Press, Knoxville.
- Fedoruk, A.N. 1971. *Freshwater fishes of Manitoba: checklist and keys*. 130 pp. Department of Mines, Resources & Environmental Management, Winnipeg, Manitoba.
- Fowler, H.W. 1910. Notes on the variation of some species of the genus *Notropis*. *Proceedings of the Academy of Natural Sciences of Philadelphia*, 62: 273–293.
- Gilbert, C.R. 1978. Type catalogue of the North American cyprinid fish genus *Notropis*. *Bulletin of the Florida State Museum, Biological Sciences*, 23(1): 1–104.
- Gilbert, C.R. 1980. *Notropis stramineus* (Cope), sand shiner. P. 314 in Lee, D.S. et al. (Eds.), *Atlas of North American freshwater fishes*. x, 854 pp. North Carolina State Museum of Natural History, Raleigh.
- Gilbert, C.R. 1998. *Type catalogue of recent and fossil North American freshwater fishes: families Cyprinidae, Catostomidae, Ictaluridae, Centrarchidae and Elasmomatidae*. ii, 284 pp. Florida Museum of Natural History, Special Publication No. 1, Gainesville.
- Girard, C. 1856. Researches upon the cyprinoid fishes inhabiting the fresh waters of the United States of America, west of the Mississippi Valley, from specimens in the Museum of the Smithsonian Institution. *Proceedings of the Academy of Natural Sciences of Philadelphia*, 8(5): 165–213. [Issued in the serial in 1857 but published as a separate in 1856].
- Günther, A. 1868. *Catalogue of the Physostomi ... Catalogue of the fishes in the British Museum*, vol. 7. xx, 512 pp. Taylor & Francis, London.
- Hocutt, C.H. & Wiley, E.O. (Eds). 1986. *The zoogeography of North American freshwater fishes*. xiii, 866 pp. Wiley, New York.
- Holton, G.D. & Johnson, H.E. 1996. *A field guide to Montana fishes*, Ed. 2. 104 pp. Montana Department of Fish, Wildlife and Parks, Helena.
- Hubbs, C.L. 1926. A check-list of the fishes of the Great Lakes and tributary waters, with nomenclatorial notes and analytical keys. *University of Michigan Museum of Zoology, Miscellaneous Publications*, 15: 1–77.
- Hubbs, C.L. & Greene, C.W. 1928. Further notes on the fishes of the Great Lakes and tributary waters. *Papers of the Michigan Academy of Science, Arts and Letters*, 8: 371–392.
- Hubbs, C.L. & Lagler, K.F. 1964. *Fishes of the Great Lakes region, with a new preface*. xv, 213 pp., 44 pls. University of Michigan Press, Ann Arbor.
- Jenkins, R.E. & Burkhead, N.M. 1994. *Freshwater fishes of Virginia*. xxiii, 1079 pp. American Fisheries Society, Bethesda, Maryland.

- Jordan, D.S. 1885. Identification of the species of Cyprinidae and Catostomidae, described by Dr. Charles Girard, in the Proceedings of the Academy of Natural Sciences of Philadelphia for 1856. *Proceedings of the United States National Museum*, **8**: 118–127.
- Jordan, D.S. & Evermann, B.W. 1896. The fishes of North and Middle America: a descriptive catalogue of the species of fish-like vertebrates found in the waters of North America north of the Isthmus of Panama. *Bulletin of the United States National Museum*, **47**(1): 1–1240.
- Jordan, D.S. & Gilbert, C.H. 1883. Synopsis of the fishes of North America. *Bulletin of the United States National Museum*, **16**: 1–1018.
- McAllister, D.E. 1990. A list of the fishes of Canada. *Sylogus*, **64**: 1–110.
- McAllister, D.E. & Coad, B.W. 1974. Fishes of Canada's national capital region. *National Museum of Natural Sciences Ottawa, Ontario, Miscellaneous Special Publication*, **24**: 1–200.
- Mandrak, N.E. & Crossman, E.J. 1992. *A checklist of Ontario freshwater fishes*. v, 176 pp. Royal Ontario Museum, Toronto, Ontario.
- Mayden, R.L., Burr, B.M., Page, L.M. & Miller, R.R. 1992. The native and freshwater fishes of North America. Pp. 827–863 in Mayden, R.L. (Ed.), *Systematics, historical ecology, and North American freshwater fishes*. xxi, 969 pp. Stanford University Press, Stanford, California.
- Mayden, R.L. & Gilbert, C.R. 1989. *Notropis ludibundus* (Girard) and *Notropis tristis* (Girard), replacement names for *N. stramineus* (Cope) and *N. topeka* (Gilbert) (Teleostei: Cypriniformes). *Copeia*, **1989**(4): 1084–1089.
- Metcalf, A.L. 1966. Fishes of the Kansas River System in relation to zoogeography of the Great Plains. *University of Kansas Publications, Museum of Natural History*, **17**(3): 23–189.
- Miller, R.S. & Robison, H.W. 1973. *The fishes of Oklahoma*. 246 pp. Oklahoma State University Press, Stillwater.
- Moore, G.A. 1968. Fishes. Pp. 21–165 in Blair, W.F. et al. (Eds.), *Vertebrates of the United States*, Ed. 2. 616 pp. McGraw-Hill, New York.
- Morris, J., Morris, L. & Witt, L. 1972. *The fishes of Nebraska*. 98 pp. Nebraska Game and Parks Commission, Lincoln.
- Nelson, J.S. & Gerking, S.D. 1968. *Annotated key to the fishes of Indiana*. 84 pp. Indiana University Department of Zoology, Bloomington.
- Page, L.M. & Burr, B.M. 1991. *A field guide to freshwater fishes: North America north of Mexico*. xii, 432 pp., 48 pls. Houghton Mifflin, Boston.
- Pearson, W.D. & Krumholz, L.A. 1984. *Distribution and status of Ohio River fishes*. xv, 400 pp. Oak Ridge National Laboratory, Oak Ridge, Tennessee.
- Pflieger, W.L. 1975. *The fishes of Missouri*. viii, 343 pp. Missouri Department of Conservation, Jefferson City.
- Phillips, G.L., Schmid, W.D. & Underhill, J.C. 1982. *Fishes of the Minnesota Region*. x, 248 pp. University of Minnesota Press, Minneapolis.
- Putnam, F.W. 1863. List of the fishes sent by the Museum to different institutions, in exchange for other specimens, with annotations. *Bulletin of the Museum of Comparative Zoology, Cambridge, Massachusetts, U.S.A.*, **1**: 1–16.
- Robins, C.R., Bailey, R.M., Bond, C.E., Brooker, J.R., Lachner, E.A., Lea, R.N. & Scott, W.B. 1991. Common and scientific names of fishes from the United States and Canada. *Special Publication of the American Fisheries Society*, **20**: 1–183.
- Robison, H.W. & Buchanan, T.M. 1988. *Fishes of Arkansas*. xviii, 536 pp. University of Arkansas Press, Fayetteville.
- Rohde, F.C., Arndt, R.G., Lindquist, D.G. & Parnell, J.F. 1994. *Freshwater fishes of the Carolinas, Virginia, Maryland, and Delaware*. vii, 222 pp. University of North Carolina Press, Chapel Hill & London.
- Schmidt, T.R. & Gold, J.R. 1995. Systematic affinities of *Notropis topeka* (Topeka shiner) inferred from sequences of the cytochrome b gene. *Copeia*, **1995**(1): 199–204.
- Scott, W.B. & Crossman, E.J. 1973. *Freshwater fishes of Canada*. xi, 966 pp. Fisheries Research Board of Canada, Ottawa.

- Sigler, W.F. & Sigler, J.W. 1996. *Fishes of Utah, a natural history*. 375 pp. University of Utah Press, Salt Lake City.
- Smith, C.L. 1986. *The inland fishes of New York State*. xi, 522 pp. State Department of Environmental Conservation, Albany, New York.
- Smith, P.W. 1979. *The fishes of Illinois*. xxvii, 314 pp. University of Illinois Press, Urbana-Chicago-London.
- Stauffer, J.R., Jr., Boltz, J.M. & White, L.R. 1995. *The fishes of West Virginia*. 389 pp. Academy of Natural Sciences of Philadelphia, Philadelphia, Pennsylvania.
- Sublette, J.E., Hatch, M.D. & Sublette, M. 1990. *The fishes of New Mexico*. xiii, 393 pp. University of New Mexico Press, Albuquerque.
- Suttkus, R.D. 1958. Status of the nominal cyprinid species *Moniana deliciosa* Girard and *Cyprinella texana* Girard. *Copeia*, 1958(4): 307-318.
- Tanyolac, J. 1973. Morphometric variation and life history of the cyprinid fish *Notropis stramineus* (Cope). *University of Kansas Museum of Natural History, Occasional Papers*, 12: 1-28.
- Trautman, M.B. 1981. *The fishes of Ohio with illustrated keys*, Rev. Ed. xvii, 683 pp. Ohio State University Press, Columbus.
- Warren, M.L., Jr., Burr, B.M. & Grady, J.M. 1994. *Notropis albizonatus*, a new cyprinid fish endemic to the Tennessee and Cumberland River drainages, with a phylogeny of the *Notropis procne* species group. *Copeia*, 1994(4): 868-886.

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o The Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).